

## CLAIMS

1. A pothole protection mechanism for a lift vehicle including a lifting section supported on a vehicle frame, the pothole protection mechanism comprising:
  - an actuator attached to the lifting section of the lift vehicle, the actuator being displaced between an extended position and a retracted position based on a position of the lifting section;
  - a crank including an engagement member at an upper end positioned to be engaged by the actuator, the crank further including a slot between the upper end and a lower end, wherein a connector secured to the vehicle frame and engaged with the crank through the slot movably secures the crank to the vehicle frame;
  - a coupler link pivotally secured at a first end to the lower end of the crank; and
  - a pothole protection bar pivotally secured to a second end of the coupler link and pivotally secured to the vehicle frame,
    - wherein the vehicle frame, the crank, the connector, the coupler link and the pothole protection bar define a five-bar mechanism for actuation of the pothole protection bar.
2. A pothole protection mechanism according to claim 1, wherein the pothole protection bar is pivoted between a use position and a stowed position via the five-bar mechanism based on the position of the lifting section.
3. A pothole protection mechanism according to claim 1, wherein the actuator comprises:
  - a plate member slidably mounted on a pin rigidly secured to the frame; and
  - a spring mounted on the pin between the frame and the plate member.
4. A pothole protection mechanism according to claim 3, wherein a spring constant of the spring is about 470 lb/in.
5. A pothole protection mechanism according to claim 1, wherein the connector is structurally configured to allow only for translation of the crank with respect to the connector.

6. A pothole protection mechanism according to claim 5, wherein the slot is at a predetermined angle with respect to a longitudinal axis of the crank.

7. A pothole protection mechanism according to claim 6, wherein the slot is offset with respect to the longitudinal axis of the crank.

8. A pothole protection mechanism according to claim 1, wherein the connector is structurally configured only for translation and rotation of the crank with respect to the connector.

9. A pothole protection mechanism according to claim 1, wherein the pothole protection bar is pivoted through an arc substantially limited to 90° between a use position and a stowed position via the five-bar mechanism based on the position of the lifting section.

10. A pothole protection mechanism according to claim 1, further comprising a frame pin coupled to the vehicle frame, the frame pin serving as a stop for the crank.

11. A lift vehicle comprising:

a vehicle frame;

a lifting section supported on the vehicle frame; and

a pothole protection mechanism, the pothole protection mechanism comprising:

an actuator attached to the lifting section of the lift vehicle, the actuator being displaced between an extended position and a retracted position based on a position of the lifting section,

a crank including an engagement member at an upper end positioned to be engaged by the actuator, the crank further including a slot between the upper end and a lower end, wherein a connector secured to the vehicle frame and engaged with the crank through the slot movably secures the crank to the vehicle frame,

a coupler link pivotally secured at a first end to the lower end of the crank, and

a pothole protection bar pivotally secured to a second end of the coupler link and pivotally secured to the vehicle frame,

wherein the vehicle frame, the crank, the connector, the coupler link and the pothole protection bar define a five-bar mechanism for actuation of the pothole protection bar.

12. A lift vehicle according to claim 9, wherein the lifting section comprises a scissors lift.

13. A lift vehicle according to claim 11, wherein the actuator comprises: a plate member slidably mounted on a pin rigidly secured to the frame; and a spring mounted on the pin between the frame and the plate member.

14. A lift vehicle according to claim 13, wherein a spring constant of the spring is about 470 lb/in.

15. A pothole protection mechanism for a lift vehicle including a lifting section supported on a vehicle frame, the pothole protection mechanism comprising an extendable and retractable pothole protection bar and a five-bar mechanism for actuation of the pothole protection bar based on a position of the lifting section.

16. A pothole protection mechanism for a lift vehicle including a lifting section supported on a vehicle frame, the pothole protection mechanism comprising:  
an actuator attached to the lifting section of the lift vehicle, the actuator being displaced between an extended position and a retracted position based on a position of the lifting section;

a crank including an engagement member at an upper end positioned to be engaged by the actuator, the crank further including a slot between the upper end and a lower end, wherein a connector secured to the vehicle frame and engaged with the crank through the slot movably secures the crank to the vehicle frame;

a coupler link pivotally secured at a first end to the lower end of the crank; and a pothole protection bar pivotally secured to a second end of the coupler link and pivotally secured to the vehicle frame.